

FI-269

# **Best Management Practices for Pesticides**

*A Program to Reduce Aquatic Toxicity in the Delta Ecosystem*

A Category III Proposal to the CALFED Bay-Delta Program

## **Presented by:**

Coalition for Urban/Rural Environmental Stewardship  
(CURES)

*A California Nonprofit Public Benefit Corporation  
Federal Tax ID No. pending*

## **Principal Contact:**

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JUL 28 1997

## **Project Collaborators:**

Agricultural Commissioner, Contra Costa County, *Mr. Ed Meyer*

Agricultural Commissioner, Sacramento County, *Mr. Frank Carl*

Agricultural Commissioner, San Joaquin County, *Mr. Scott Hudson*

California Association of Nurserymen, *Mr. Robert Falconer*

California Department of Pesticide Regulation, *Mr. Paul Gosselin*

California Farm Bureau Federation, *Mr. George Gomes*

Sacramento Regional County Sanitation District, *Mr. Gerry Troyan*

Sacramento River Watershed Program

University of California, Center for Ecological Health, *Dr. David Hinton*

University of California, Centers for Water and Wildlands Resources, *Dr. Don Erman*

University of California, Statewide Integrated Pest Management Program, *Dr. Frank Zalom*

Western Crop Protection Association, *Mr. Jim Gray*

## **RFP Project Group Type:**

Group 3: Services/Water Quality

## **Executive Summary**

The Coalition for Urban/Rural Environmental Stewardship (CURES) is a California Nonprofit Public Benefit Corporation. (A tax-exempt, charitable foundation status is being applied for under IRC 501(c)(3)). CURES was founded specifically to support research, education and public outreach as well as promote stewardship of the environment with respect to the manufacture, transportation, handling, use, management and disposal of lawn, garden, landscape, structural and agricultural pesticides, fertilizers, and other crop production input products.

This proposal to the CALFED Bay-Delta Program for Category III funding is one of the first phases within a larger vision of projects that CURES is now implementing. CURES seeks to build upon the existing research effort into pesticide management and BMPs currently funded (over \$1.5 million in California) by the crop protection industry. CURES will combine resources from industry as well as grants to pursue a long-term plan that includes support for:

- Basic scientific research
- Adaptive research and demonstration projects
- Website-based resource for pesticide use, safety, BMPs and alternatives
- Market and opinion research
- Development and publication of educational materials and resources
- Training of key influencers
- Development and implementation of education and public outreach programs

The proposed tasks are the building blocks for the future. We believe that managing and controlling offsite consequences of the use of pesticides is a matter of wise selection, adaptation and integration of best management practices (BMPs) by users. We believe that the widespread application of BMPs and an understanding of the appropriate use of alternatives will be more effective than restricting or banning the use of specific chemicals and will manifest itself in significant beneficial impacts to the quality of water in the Delta watershed.

We are depending on unusually broad-based cooperation among a diverse group of agencies and associations, all of which are committed to pollution source reduction. The project as proposed is designed to accomplish the following short-term goals:

1. Using currently known options and avenues of access, move quickly to raise the awareness of urban and rural pesticide users regarding the need to use BMPs and the options available and provide motivation to improve their management practices.
2. Review the known options and current state of knowledge regarding BMPs
  - develop an inventory of options and resources
  - identify research and resource needs
3. Build the foundation for a more effective long-range education and outreach program

Later phases of this project will build on work initiated here

- research, basic science
- applied science, demonstrations, adapting to specific sites

Assumptions:

- That consumer and agricultural pesticide use and disposal practices can be improved through training of key influencers and a well designed and aggressive public education/outreach program.
- That improved practices will lead to a significant reduction in the unintended discharge of pesticide residues to the Delta and tributaries.
- That the most effective way to prevent offsite consequences of pesticide use, while maintaining the benefits derived from their use, is through the expeditious application of BMPs

Vision:

CURES' long-range vision is to facilitate and support basic, applied and adaptive research and demonstration projects; identify research, information and resource needs; and conduct continuous market research and message development in order to keep the messages fresh and current. Educational materials are intended to be produced and distributed at little or no cost to end-users. We intend to develop funding from a broad range of sources. The program will apply itself to urban as well as agricultural challenges and will eventually exceed the scope of pesticides in water to include other environmental issues such as air quality and worker safety.

The proposed project includes the following primary components:

1. Develop inventory of BMPs for storage, use, management and disposal of consumer and agricultural pesticides
2. Conduct public opinion and awareness research, including baseline and tracking surveys, for consumer and agricultural use
3. Develop messages and materials for consumer education/outreach campaign
4. Develop website
5. Implement consumer public relations and strategic advertising campaign
6. Implement agricultural user public relations and media campaign
7. Evaluate and adapt on an on-going basis for continuous improvement
8. Develop detailed plans for future expansion of project phases

## Project Description:

### Project Description and Approach

#### 1. Develop inventory of BMPs for storage, use, management and disposal of consumer and agricultural pesticides

- Identify and catalog information and resources regarding BMPs and alternatives
  - to mitigate problems
  - to prevent problems
- Develop single database of options for proper use, handling, disposal and recycling
- Identify information gaps and research needs

#### 2. Conduct public opinion and awareness research, including baseline and tracking surveys, for consumer and agricultural uses

- Conduct baseline public awareness survey to determine current level of knowledge, identify key motivational issues and test messages
- Conduct focus groups to refine approach and messages
- Identify and prioritize most effective ways to educate and communicate
- Explore what kinds of programs will be most effective in providing increased incentives to participate in BMPs
- Conduct periodic tracking surveys to acquire feedback for adaptation and improvement of approach and to measure project performance

The baseline study will identify the level of awareness and activity on the part of the public to the issues of concern. It will also provide a benchmark for measuring the performance of the program. The tracking surveys measure the level of performance as and provide feedback for adaptive management. Focus groups develop in-depth insights and understanding of motivations and perceptions.

Quality research provides clarity as well as reliable guidance for decision-making. Its execution is marked by adherence to industry standards of professionalism and ethics. It is characterized by acute analytical skills that enable the researcher to go beyond the data and translate research findings into actionable marketing and public relations recommendations.

#### 3. Develop messages and materials for consumer campaign

- Develop public relations and strategic advertising plan
- Develop campaign point-of-purchase display and materials
  - may include video, computer station, brochures
- Develop a strong, positive "push" outreach campaign
- Develop a video training program and information kit for retail staff

The focus of public relations is to effectively communicate key messages to targeted audiences. This requires the presentation of messages multiple times and in a variety of ways. The critical targeted audience for this phase of the project is home and garden pesticide users. The most cost-effective approach to communicating with target

audiences, including decision-makers, local influentials and the public throughout the region, is through an integrated marketing communications effort led by public relations and supported by strategic advertising. The communications outreach strategy should be designed to achieve and maintain credibility by raising awareness of the Delta and the public's role in protecting it in a manner which will positively change behavior.

Effective communications means that a message sent is received and identified by the target audience as having credibility. Effective communications results in the receiver taking action or changing behavior. The key to a successful project is credibility, not just visibility. Advertising communicates to a audience, public relations communicates with an audience.

4. Develop website

- Develop a website for easy, centralized public and professional access to information
- Develop links to and from other internet resources: agencies, universities, companies, organizations, easy cross-referencing and access to other resources
- Organize for use by the agriculture industry as well as consumers
- Develop data gathering capability (performance review and demographics)

5. Implement consumer public relations and strategic advertising campaign

- Place point-of-purchase educational materials at retail sites
  - most materials will be distributed by CURES at no charge to users
- Implement public relations campaign
- Use tracking surveys and adaptive management to revise the campaign and keep the messages and approach fresh

A primary vehicle to transfer the information to home and garden users will be through the retailers of consumer pesticide products. These retailers will be accessed via the membership of the California Association of Nurserymen, Responsible Industry for a Sound Environment and the Western Crop Protection Association.

Other access to broaden the reach and support the messages:

- Media campaign
- Agricultural Commissioners
- Sacramento Regional County Sanitation District
- UC Master Gardener Program
- UC Cooperative Extension

6. Implement agricultural user public relations and media campaign

- Establish a campaign to encourage the agricultural community to adapt BMPs

7. Evaluate and adapt on an on-going basis for continuous improvement

- Use feedback mechanisms to make changes and improvements in the project on an on-going basis: baseline survey data, tracking survey data, focus groups, retailer interviews, website data, feedback through collaborators

8. Develop detailed plans for future expansion of project phases

- Prepare a plan for filling information gaps and guiding additional research
- Prepare a plan to support long-range maintenance and frequent updating of website
- Develop plan to expand coverage to the entire CALFED region
- Develop plan to include commercial landscape maintenance companies, parks, golf courses and transportation right-of-way maintenance (highway and railroad)

This project proposal was developed with the following assumptions:

- The most effective way to prevent offsite consequences of consumer and agricultural pesticide use, while preserving the benefits derived from their use, is through the intelligent use of BMPs
- BMP use can be increased and improved with a combined program of training professionals and key influencers and an aggressive public relations campaign
- There is already a substantial amount of information on using BMPs available in the public domain, however it is not readily accessible
- Centralizing that information for easy access and adapting it to specific regional purposes is the quickest and most cost-effective way to a significant reduction in the unintended discharge of pesticide residues to the Delta
- 87% of the population is motivated to change behavior by emotion
- 13% of the population is motivated by reason
- The Delta and the environment are issues that can elicit strong emotions

This project has been designed to operate as a cooperative effort with the project being proposed by Dr. Frank Zalom, University of California Statewide Integrated Pest Management Program, and Dr. David Hinton, University of California Center for Environmental Health to study BMPs in orchard dormant spray programs and urban use. It is the intention of CURES and the University of California to seriously explore ways merge these projects at a later phase. We feel that the two proposed projects are not only compatible, but complementary in that they will move our state of knowledge forward at a rapid pace and produce quick positive results for the Delta.

Additionally, the University and CURES are making plans to co-sponsor a research conference on BMPs. A grant request is pending at US EPA to help defer some costs. The conference will bring together those who study the science of pesticide environmental fate with those who conduct adaptive research.

Project Location:

The consumer home and garden program will be focused on the greater metropolitan regions of Sacramento, Stockton, Modesto and Tracy. This area encompasses four distinct media markets, except television which is a single market. It is a large enough region to provide a substantial impact on the Delta, yet small enough to be covered by a program of manageable size. Residents of this area have a unique regional identity with

the Delta. They have an interest in protecting the Delta and the many benefits it contributes to their quality of life: recreation, food, water, climate, jobs. This project will take advantage of that regional "ownership" and leverage it to motivate consumers to be smart when using and disposing pesticides.

The initial agriculture campaign will cover, at a minimum, Sacramento, Yolo, Solano, San Joaquin, Stanislaus, Colusa, Sutter, Yuba and Contra Costa counties. Expansion to a full public relations campaign covering the entire CALFED region, and possibly the entire State of California, is intended at a later date.

### Expected Benefits:

Within the water quality stressor category, CALFED has identified acute and chronic toxicity from urban and agricultural runoff as a stressor of concern. Mitigating and/or preventing toxicity due to runoff is an example of restoration actions that will provide a benefit to the Delta ecosystem. This program will raise the awareness of urban and agricultural pesticide end-users regarding their responsibility to use BMPs to prevent runoff. The result will be a significant reduction of unintended pesticide discharge.

The research and database development will provide a valuable information resource to assist all users select and adapt BMPs to their circumstances. The intent is to make information about why, what and how readily available to those chose to take action.

Combined, these programs will lead to an increase in awareness and new motivation to implement BMPs and make environmental stewardship part of everyone's daily routine. A successful program will reduce acute and chronic toxicity due to pesticides in urban and agricultural runoff.

### Background and Biological/Technical Justification:

Exposure to various concentrations of pesticides in urban and agricultural runoff can cause acute or chronic toxicity to aquatic life and wildlife. These losses are preventable. The Department of Pesticide Regulation's Rice Pesticide Program has demonstrated the effectiveness of a cooperative approach between regulators and end-users to implement management programs and BMPs for the reduction of pesticide discharge. It is recognized that the program has resulted in an over 98% reduction in the total loading of rice pesticides in the Sacramento River. Using the Rice Pesticide Program as a model, we believe that this proposed program can also provide significant benefits to the Delta ecosystem. We already have a base of knowledge that can be used to get a headstart. We don't need to wait for a scientific research program to produce results. With this project operational, we can quickly disseminate current information and adapt new knowledge and technology as it becomes available.

### Scope of Work:

The website will include:

- Access to consumer and agricultural information on BMPs and alternatives
- Across-referenced structure for easy search
- Links to and from a wide variety of government, university and organization sites

CURES will provide most training and resource materials free-of-charge to any interested party. This includes all point-of-purchase displays, supporting materials and training for retail locations that will commit to using the program. Some materials may require a nominal charge.

CURES will contract with a professional public opinion research firm to provide detailed and accurate demographic data and analysis, focus group facilitation and message testing. CURES will contract with a professional public relations firm to develop a high impact education and outreach campaign, including strategic advertising and media promotions.

### Monitoring and Data Evaluation:

The primary method of monitoring and evaluating performance will be via comparison of periodic public opinion tracking data to a baseline survey taken at the beginning of the project. Done by statistically-sound survey methods, this data can be accurate to +/- 4%.

- Baseline public opinion survey
  - establish level of public awareness of Delta water quality issues
  - establish level of understanding of impacts of current practices
  - identify current practices in use by consumers and agriculture
  - identify credible sources for information and motivation
  - identify keys to motivating behavioral change
- Annual tracking survey
  - measure changes in level of awareness and attitudes
  - measure changes in behavior and use of BMPs or alternatives
- Survey of consumer product retailers, Cooperative Extension, Agricultural Commissioners, Pest Control Advisors and other key influencers

Review of water quality monitoring data from the following established programs:

- California Department of Pesticide Regulation
- California Department of Fish & Game
- Central Valley Regional Water Quality Control Board
- Sacramento River Watershed Program
- Sacramento Regional County Sanitation District

### Implementability:

A key component of this project is the diverse coalition of collaborators who have made a commitment to work with CURES and provide their expertise as well as access to and



feedback from their constituents. None of the listed collaborators will receive any financial benefit from their participation in this project. They are participating because they believe in the project. These collaborators provide strong local credibility and access to consumer and agricultural pesticide end-users, as well as an excellent technical knowledge base on which to rely.

**Agricultural Commissioners: Contra Costa, Sacramento and San Joaquin Counties**

- Access to all retail outlets and most agricultural users via the pesticide dealer license and the annual pesticide use permit process
- Awareness of local programs with which to collaborate

**California Association of Nurserymen**

- Access to home and garden users via members, retail sales and advice
- Certified Nursery Professional Program

**California Department of Pesticide Regulation**

- Technical support and peer review
- Access to water quality monitoring data and BMP information

**Responsible Industry for a Sound Environment -**

- Manufacturer's of consumer and industrial use pesticides
- Knowledge of product chemistry and environmental fate
- Connections to all users via distribution and retail network, advisor training

**Sacramento Regional County Sanitation District**

- Access to water quality monitoring data
- Access to urban consumers

**Sacramento River Watershed Program**

- Broad group of stakeholders and agencies with an interest in the health of the Sacramento River watershed - provides local access and influence
- Access to a comprehensive water quality monitoring program

**University of California**

- International reputation and credibility of scientific faculty
- Technical support and peer review
- Cooperative Extension - local credibility, access and feedback
- Experience in developing technical training programs and outreach
  - for example the pesticide Worker Protection Standard training project

**Western Crop Protection Association**

- Manufacturers of agricultural use pesticides
  - high level of technical knowledge of product chemistry and environmental fate
  - key supplier of product use information to distributors and retailers
  - connections to end-users via distribution and retail network, pest control advisors
- Distributors and retailers
  - key suppliers of use, disposal and stewardship information to end-users

## **Costs and Schedule for Implementation:**

### **Budget:**

The total budget for the proposed project is \$770,000. (See Figure 1 for details)

### **Schedule Milestones:**

This project is intended to be the start of a long-term program with future expansion of target audiences and geographic focus. For purposes of this grant request the project duration is two years.

- Baseline survey and report - due at 6 months
- Tracking surveys - taken periodically between months 6 and 24
- Website - on-line at 12 months and continuing indefinitely
  - cost of ongoing maintenance and updating of database after 12 months not included
  - ongoing costs after 12 months to be supported by CURES
- Public relations campaign
  - develop and interpret baseline survey - with survey firm - up to 6 months
  - develop and test messages - with survey firm - up to 6 months
  - implementation of public relations and media campaign - months 6 to 24
- Database of BMP methods and alternatives
  - initial outline of database due at 10 months
  - continuously adapting, adding to and upgrading throughout the project

### **Third Party Impacts:**

- Fisheries
  - improved aquatic life habitat
- Water Treatment Facilities
  - improved water quality at plant intakes
- Agriculture
  - improved control over management tools
  - reduce possibility of additional use-restrictions or banning of pesticides
  - unknown costs for BMP implementation
- Regulatory Agencies
  - reduced pressure for tighter regulatory programs
  - improved compliance with water quality objectives and management programs
- Home & Garden
  - reduced consumer exposure
- Everyone
  - improved resource for scientifically based information
  - healthier Delta Ecosystem!

## **Applicant Qualifications:**

### **Coalition for Urban-Rural Environmental Stewardship (CURES)**

CURES is the primary contractor for this proposal and will take responsibility for performance, reporting to CALFED, and oversight of budgets. An organization chart is attached (Figure 2) showing CURES' structure.

#### **California Association of Nurserymen (CAN)**

The California Association of Nurserymen is a statewide trade association representing wholesale grower, retail garden centers and associated businesses in the state of California since 1911. CAN has a membership of over 1,700 members throughout California.

CAN has been active in many public and industry outreach programs throughout the years. These include Arbor day programs for tree planting and maintenance; Fire Safe Planting, educating the public about plant material to plant in fire prone areas; Global Relief, a program to encourage tree planting for clean air and reforestation; numerous water conservation programs including the Water Wise program adopted by many water districts to conserve water in the urban environment; and Plant the Right Tree in the Right Place, an effort with utility companies to minimize planting tall growing trees under power lines. CAN has also worked with various agencies within the state government to disseminate information on pest and disease problems.

In addition to the above listed projects, CAN has granted money through it's California Association of Nurserymen Endowment for Research and Scholarship (CANERS) to research projects for pesticide alternatives and use reduction, water conservation and to minimize water runoff. CAN also founded and administers the California Certified Nursery Professional program which educates and certifies people within the nursery industry on proper plant care procedures and techniques.

#### **S.D. Murrill & Co.**

Stephen Murrill, a graduate of the University of California, Davis, with a degree in Wildlife and Fisheries Biology, is the owner and principal consultant of S.D. Murrill & Co. The firm provides project management and communications services to trade associations and industry. Mr. Murrill is a former staff consultant to the California Assembly Committee on Environmental Safety and Toxic Materials. His career includes stints as a staff research associate in agronomy for UC Cooperative Extension and a technical services representative for the Bayer Corporation.

Prior to starting his own consulting firm, S. D. Murrill & Co., in 1993, Mr. Murrill was corporate Director of Agricultural Services for Kleinfelder, an engineering and environmental sciences consulting firm. In that capacity he was responsible for directing two US EPA sponsored projects that studied the effectiveness of BMPs in managing the offsite movement of pesticides in irrigated agriculture.

As an independent consultant, Mr. Murrill has been very active in environmental issues, particularly water quality. He served on the Agricultural Waters Task Force for the Inland Surface Waters Plan and Enclosed Bays and Estuaries Plan. Currently he is a regular participant on the CALFED Water Quality Technical Group and the Sacramento River Watershed Program's Monitoring Subcommittee and Toxicity Subcommittee.

Mr. Murrill will serve, on a contract basis, as project manager for this project. In that role, he will manage budgets, contracts and scheduling. As project manager, he will interact with all subcontractors and see that adaptive management processes are used to provide continuous improvement to the project. He will also be responsible for researching and building the BMP database.

#### Western Crop Protection Association (WCPA)

WCPA is a not-for-profit trade association representing the interests of crop protection manufacturers, registrants, distributors, dealers and affiliates in the nine western United States.

A major objective of WCPA is to provide leadership and expertise to ensure the products our members make and distribute are stored, used, and disposed of properly. WCPA has produced and implemented many stewardship and educational programs, including *Benny Broccoli and His Buddies*, which brings health, nutrition, and food production information into the classroom; *Application Stewardship*, two educational slide presentations addressing application drift awareness and mitigation; *IPM: The Quiet Evolution*, a book designed to define and showcase examples of integrated pest management in the western United States; and a Spanish language novella designed to educate Spanish speaking employees on the safe handling of pesticides for the worker protection standard.

The Association engages with groups such as the California Department of Pesticide Regulation in presenting the *CA Pesticide Regulations Course*, the California Fertilizer Association to co-sponsor annual *Environmental Compliance Seminars* and *Safety Seminars* for retail dealers. WCPA is one of the founding members of the *Coalition for Drift Minimization*, a national group including USEPA and USDA to provide education to applicators to minimize drift.

**Compliance with Standard Terms and Conditions:**

- Non-Discrimination Compliance Statement: form attached - figure 3
- Small Business Preference: form attached - figure 4

# Coalition for Urban/Rural Environmental Stewardship

Task	Direct Labor Hours	Direct Salary and Benefits	Overhead Labor (Gen., Admin. & Fee)	Service Contracts	Material & Acquisition Contracts	Misc. & Other Direct Costs	TOTAL COST
<u>EMP Database Research</u>			\$ 7,500.00	\$ 75,000.00			\$ 82,500.00
<u>Research/Survey</u>			\$ 10,000.00	\$ 100,000.00			\$ 110,000.00
<u>Web Page development</u>			\$ 7,500.00	\$ 75,000.00			\$ 82,500.00
<u>PR/Communications</u>			\$ 45,000.00	\$ 450,000.00			\$ 495,000.00
<b>GRAND TOTAL</b>			<b>\$ 70,000.00</b>	<b>\$ 700,000.00</b>			<b>\$ 770,000.00</b>

CALFED / Category III Proposal

Figure 1

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# Coalition for Urban/Rural Environmental Stewardship

Foundation Organization

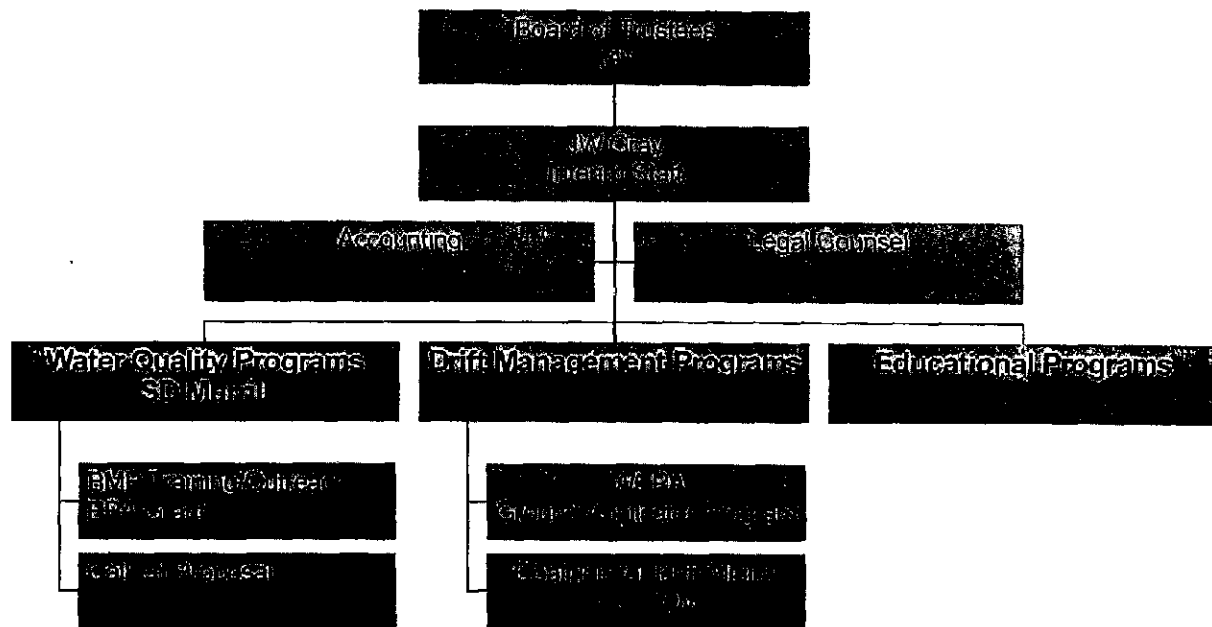


Figure 2

## NONDISCRIMINATION COMPLIANCE STATEMENT

COMPANY NAME

Coalition for Urban/Rural Environmental Stewardship

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

## CERTIFICATION

*I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.*

James W. Gray  
OFFICIAL'S NAME
July 28, 1997  
DATE EXECUTED
Sacramento  
EXECUTED IN THE COUNTY OF
  
PROSPECTIVE CONTRACTOR'S SIGNATURE
Director  
PROSPECTIVE CONTRACTOR'S TITLE
Coalition for Urban/Rural Environmental Stewardship  
PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME



Agreement No. \_\_\_\_\_

Exhibit \_\_\_\_\_

**STANDARD CLAUSES --  
SMALL BUSINESS PREFERENCE AND CONTRACTOR IDENTIFICATION NUMBER****NOTICE TO ALL BIDDERS:**

Section 14835, et. seq. of the California Government Code requires that a five percent preference be given to bidders who qualify as a small business. The rules and regulations of this law, including the definition of a small business for the delivery of service, are contained in Title 2, California Code of Regulations, Section 1896, et. seq. A copy of the regulations is available upon request. Questions regarding the preference approval process should be directed to the Office of Small and Minority Business at (916) 322-5060. To claim the small business preference, you must submit a copy of your certification approval letter with your bid.

Are you claiming preference as a small business?

\_\_\_\_\_ Yes\*      XX No

\*Attach a copy of your certification approval letter.